

Cooling liquid refill

Installation manual
For XLM, DP90 and DP100

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1. ABOUT THE COOLING CIRCUIT AND COOLING LIQUID

1.1 Overview of the Cooling circuit

Cooling circuit flow and parts

During operation, a closed loop of flexible tubing circulates cooling liquid to critical components, such as the engine and to the integrator rod entry. The cooling circuit flow, during operation, is represented in diagram below:

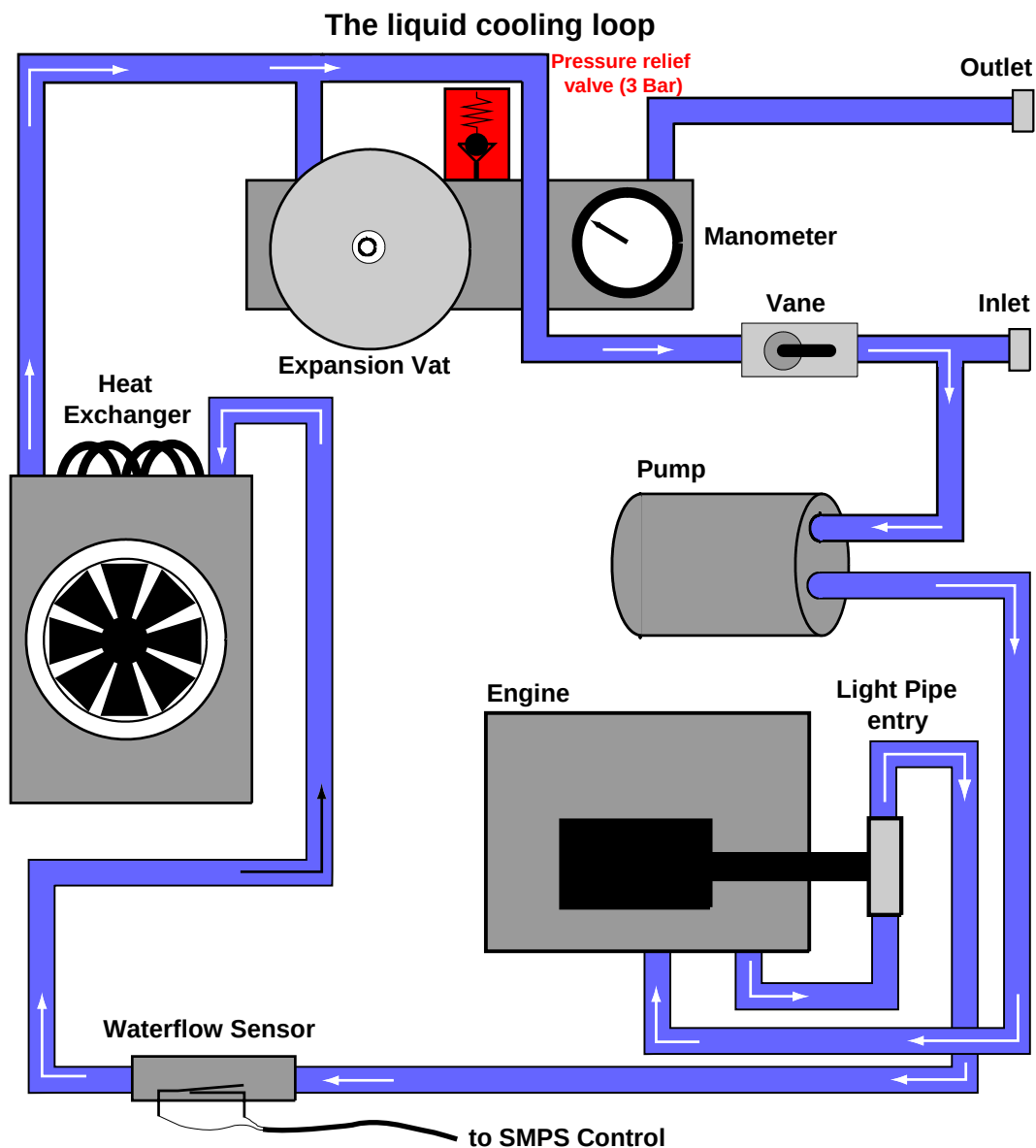


Image 1-1
Cooling circuit flow

Cooling liquid Info

Over time the cooling liquid may show deterioration and hence less effective cooling characteristics.

To maintain sound cooling properties, we advise ANNUAL replacement of the cooling liquid.



HARMFUL

BLUE ANTIFREEZE DILUTED 1,2 ETHANEDIOL

(1/3 ETHANEDIOL-2/3 DEMI WATER)

NOT FOR HOUSEHOLD USE

KEEP OUT OF REACH OF CHILDREN. HARMFUL BY ORAL INTAKE. AVOID EXPOSURE TO PREGNANT WOMEN. AVOID CONTACT WITH EYES AND SKIN

1000ml

BARCO KUURNE BELGIUM

R821679

Image 1-2
Safety label

Before opening the bottles with fresh cooling liquid, attentively read the safety instruction mentioned on the bottle label and listed below.

Handling the cooling liquid

- Avoid contact of the liquid with Eyes, Skin and Clothing.
- Avoid inhale of the noxious fumes.
- Conserve the product in the original package and on a good ventilated room.

Personal protection rules

- Handle the cooling liquid in a good ventilated room.
- Under no circumstances eat, drink and smoke while handling the liquid.
- Wear gloves (Butylrubber, PVC....) and Goggles.
- Wear suitable protection clothing.

1.2 Preparation of the projector

What has to be done?

1. **Switch Off the projector.** (see owners or installation manual of the projector)
2. Remove the side cover.
3. Remove the lamp unit to access the cooling liquid In- and Outlet.
4. Remove the screw cap on the valve of the pressure vat and press the air release valve to release the expansion vat pressure.

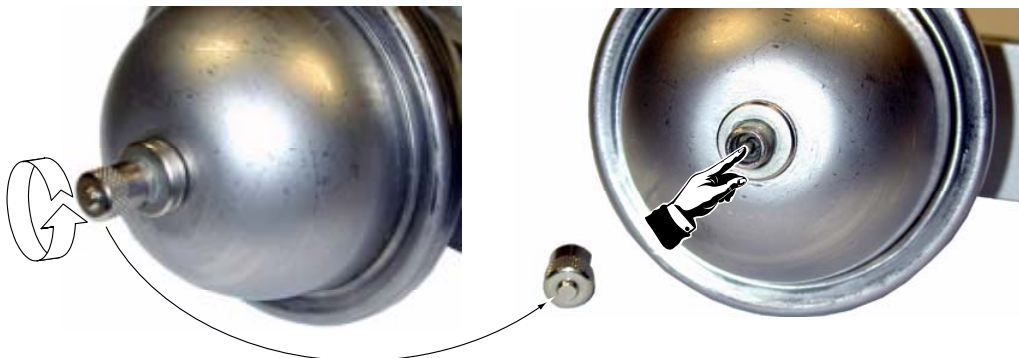


Image 1-3
Expansion vat pressure release

5. It is advisable to fill the tube of the pump suction side with liquid prior to start-up. Proceed as follows:

- Immerse the inlet tube end without fitting as far as possible into the bottle with fresh cooling liquid (1).
- Open the fitting by pressing-in valve mechanism (2) to allow filling the immersed tubing with liquid.
- Release valve to trap the liquid in the tube.
- Drop the fitting below the liquid level (3).
- Redo valve opening in fitting by pressing-in valve mechanism and allow the liquid to fill the tube (4).
- Release valve mechanism once all air is expelled.
- Remove the inlet tube out of bottle.

The liquid cooling loop - Filling the Inlet tubing

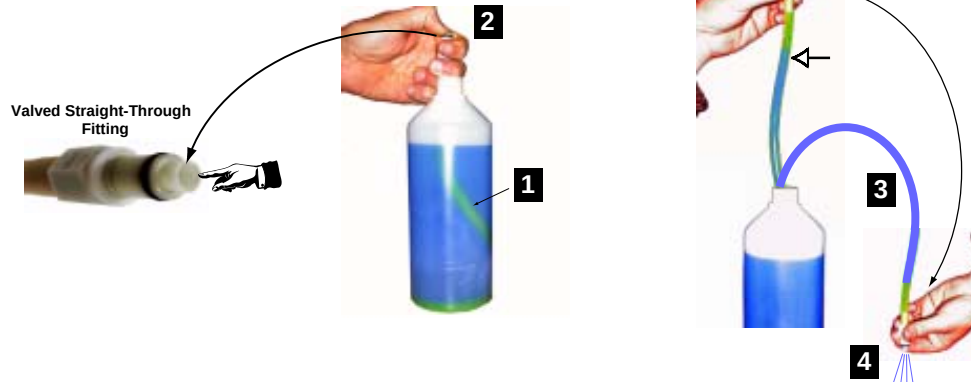


Image 1-4
Filling the inlet tubing

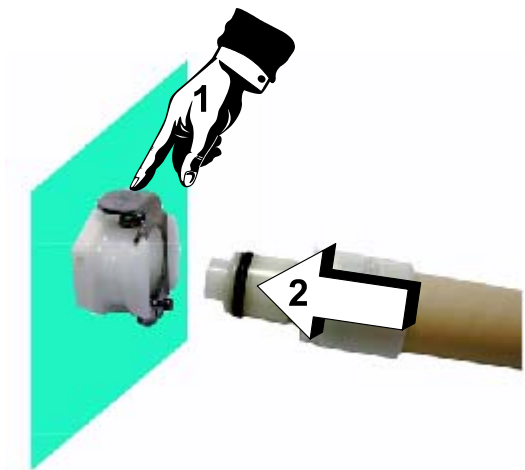
6. Proceed with liquid cooling **replacement** or liquid cooling **refilling**.

2. REPLACEMENT OF THE COOLING LIQUID

2.1 Insertion/Removing valved fitting

How to handle

To Insert



To Remove

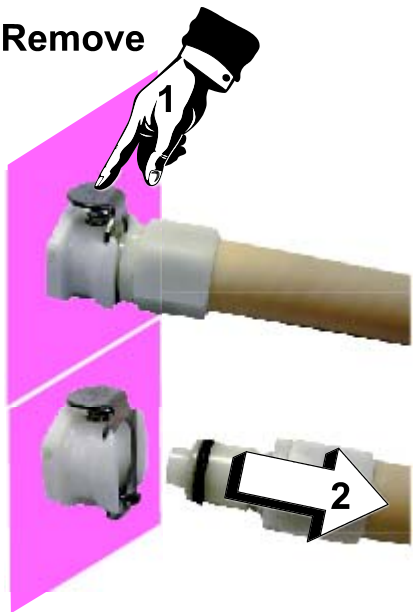


Image 2-1
Insertion/Removing hose connectors

Insertion	
	To avoid damage to the connector seal, always depress connector tab (1) prior to inserting (2). This prevents damage caused by forcing the gasket end into a closed connector. Listen for a “click”.
Removing	
	Depress connector tab (1) and remove the valved fitting (2).

2.2 Cooling liquid replacement

How to replace

1. CLOSE THE VANE.

2. Replacement of the cooling liquid

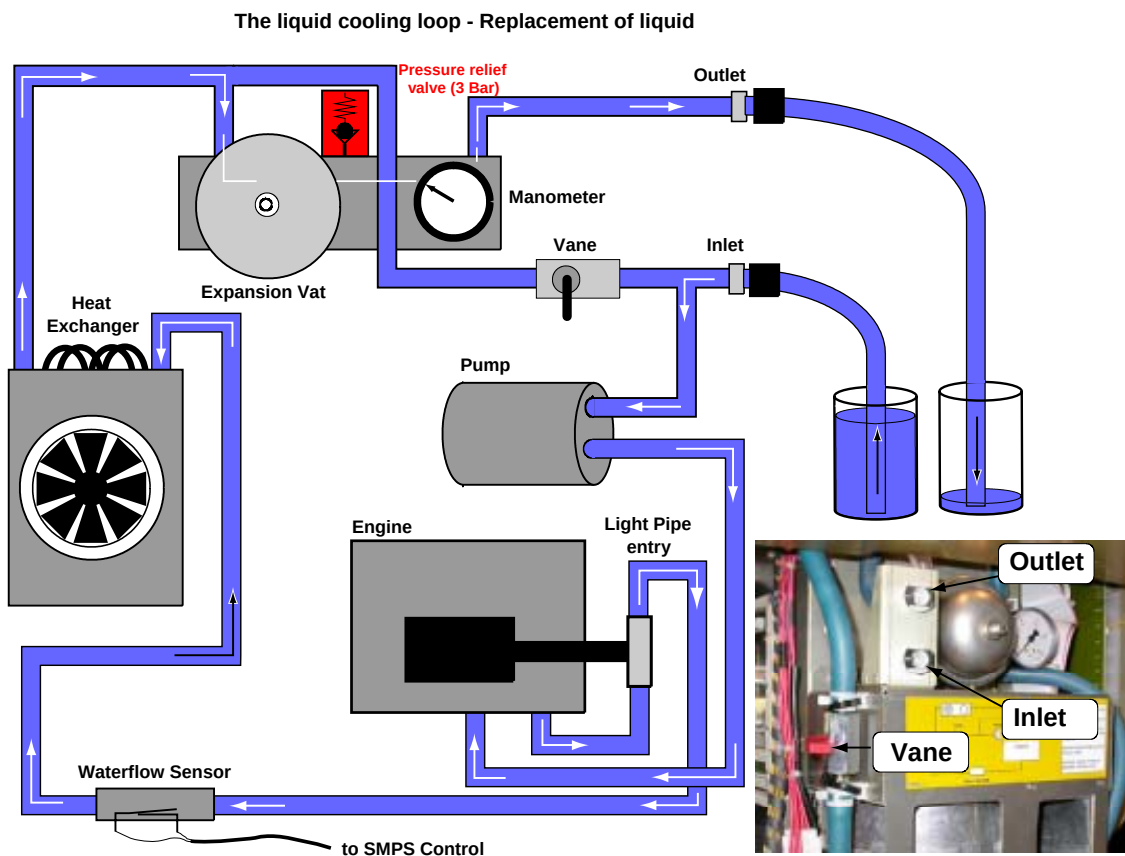


Image 2-2
Replacement of the cooling liquid (Principle)

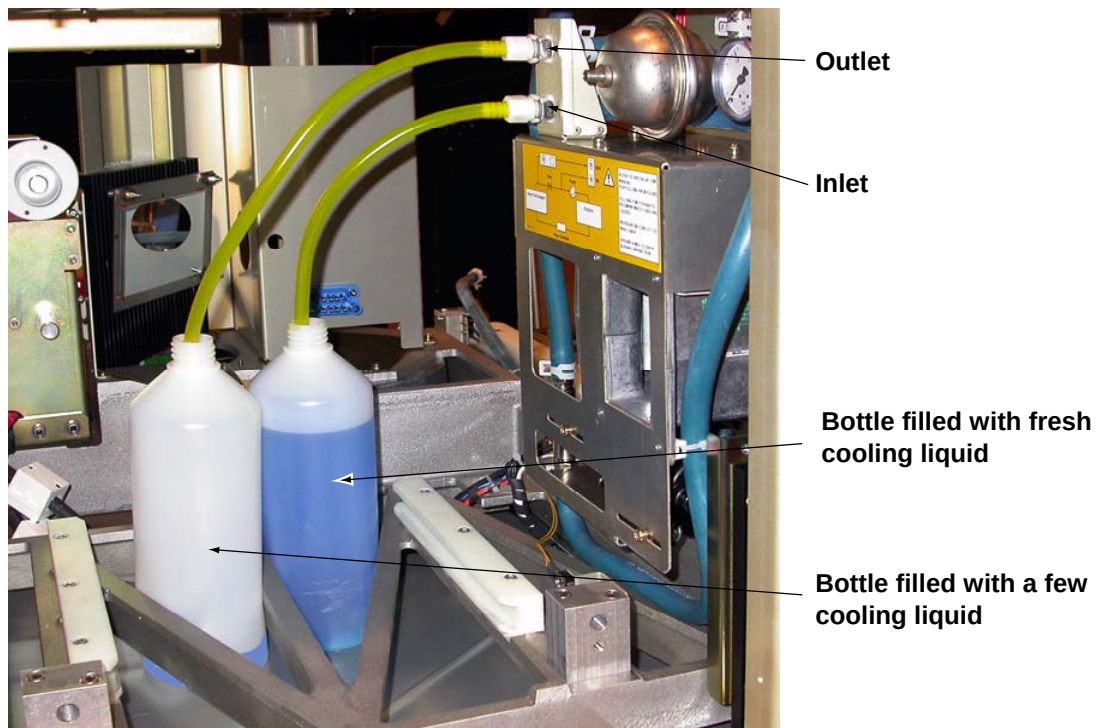


Image 2-3
Replacement of the cooling liquid (in practice)

2. Push the valved fitting of the filled tube into the Inlet 'IN' of the cooling circuit. Ensure the loose end of the tube remains immersed in the liquid.
3. First, immerse the loose end of the other tube into the a bottle filled with a little liquid, to prevent the inlet tube from draining, and next push the valved fitting into the Outlet 'OUT' of the cooling circuit.
4. Switch on the projector. After projector boot-up procedure, the internal pump will automatically start sucking-up the fresh liquid supply and expelling aged liquid into the empty bottle.
5. Timely switch Off the projector to prevent the fresh liquid level dropping below the free tube inlet. This again to avoid unwanted air being sucked into the cooling loop.
6. Continue with the procedure for expelling unwanted air.

2.3 Expelling of any unwanted air

Expelling of any unwanted air

1. Close the vane, if not yet closed.
2. Put the free tube inlet of the tube connected to the 'OUT' outlet into the remaining fresh liquid.

The liquid cooling loop - Expelling air bubbles

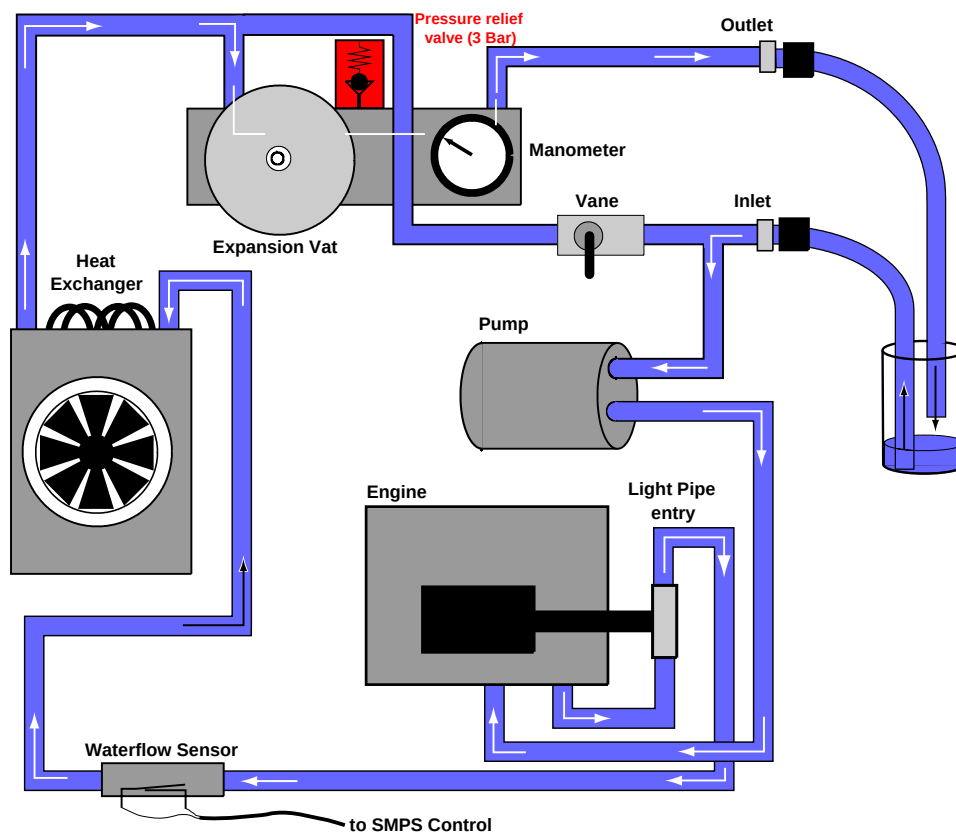


Image 2-4
Unwanted bubbles expelling (principle)

2. Replacement of the cooling liquid

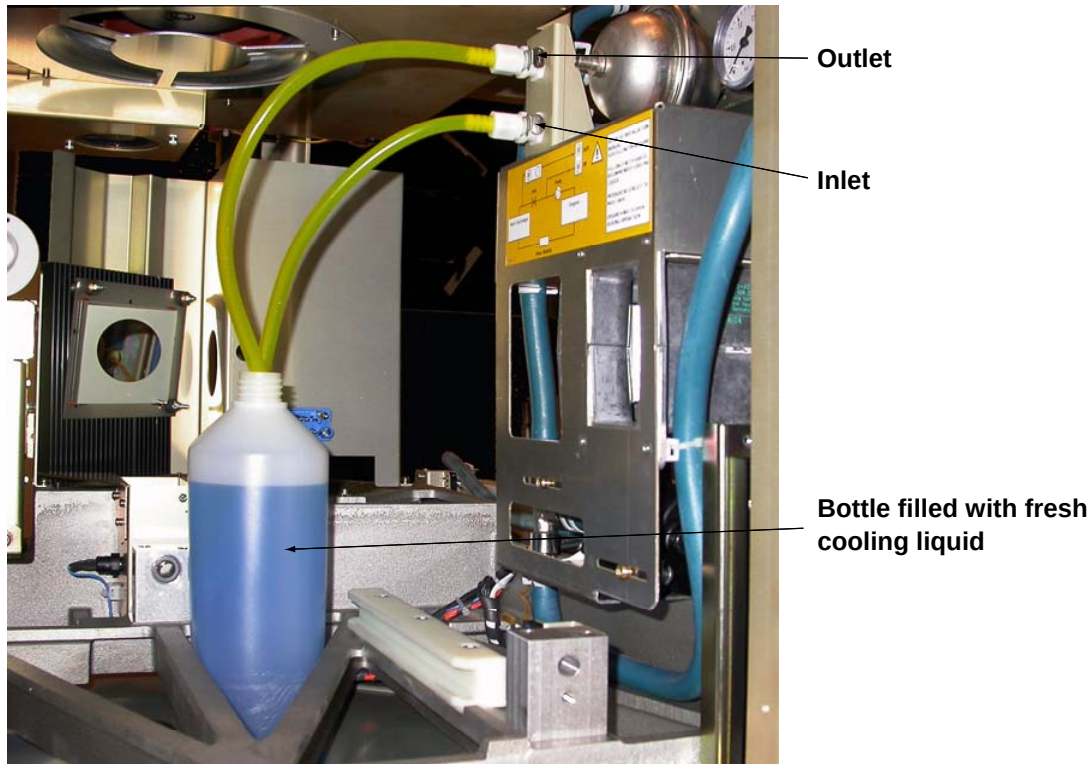


Image 2-5
Unwanted bubbles expelling (in practice)

3. Switch On the projector. Via circulation any unwanted air bubbles will be expelled.
Tip: Let circulate for 10 minutes, opening and closing the vane at intervals of 2-minutes (This expels any accumulated air in and around the vane).
4. Switch Off the projector.
5. Check the transparent inspection tube. No air should be present in this tube.

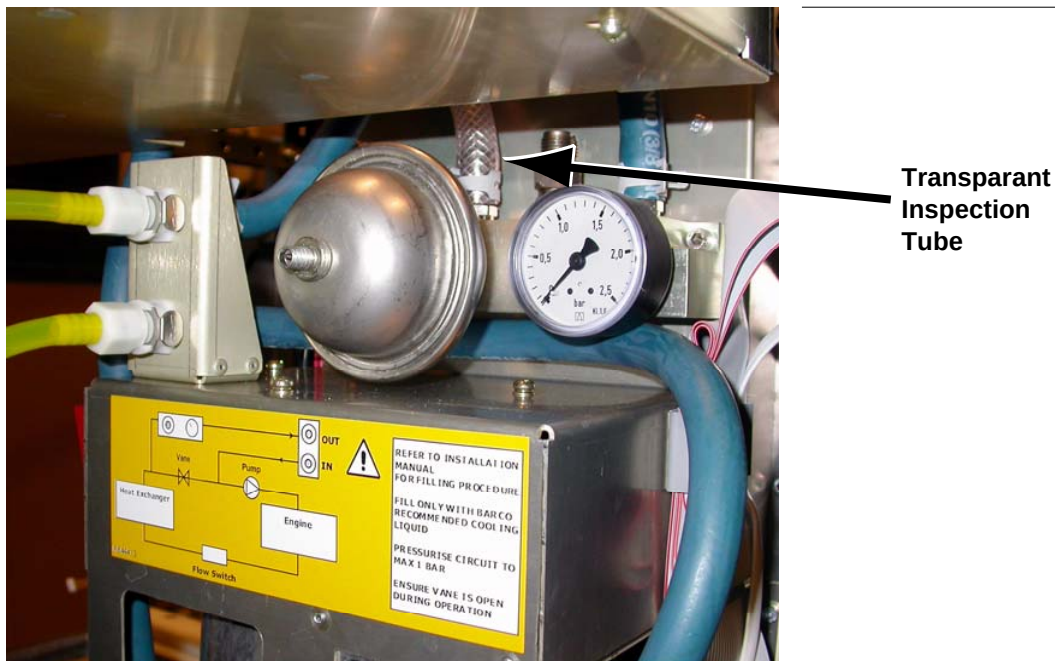


Image 2-6
Transparent tube

6. Disconnect tubes from In- and Outlet cooling loop.
Note: Removing the tube fittings from the In- Outlet of the cooling loop brings about liquid spilling. Always clean spilled liquid.
7. **OPEN THE VANE.**

8. Pressure cooling loop to 1 Bar, using appropriate air pump and adapter.

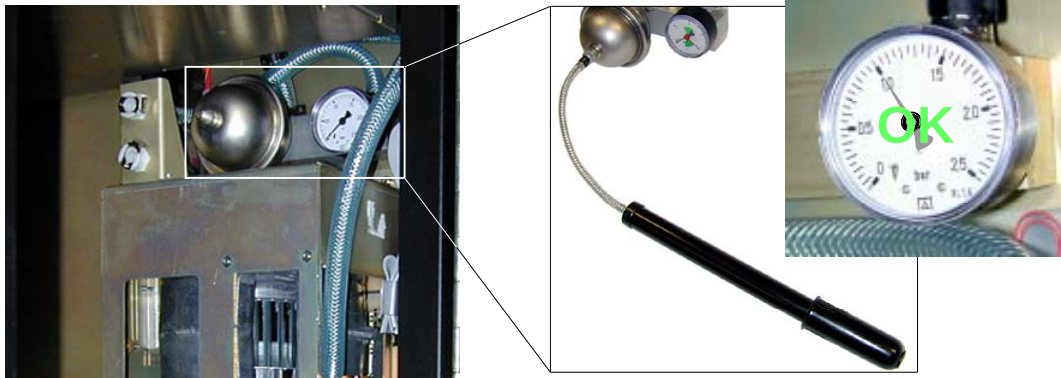


Image 2-7
Pressurizing expansion vat

3. LIQUID COOLING REFILLING, EXPELLING AIR

3.1 Refilling, expelling air

When?

Minor drops in pressure over time are to be expected. Once the minimum pressure of 0.5 bar is reached, proceed with refilling procedure.

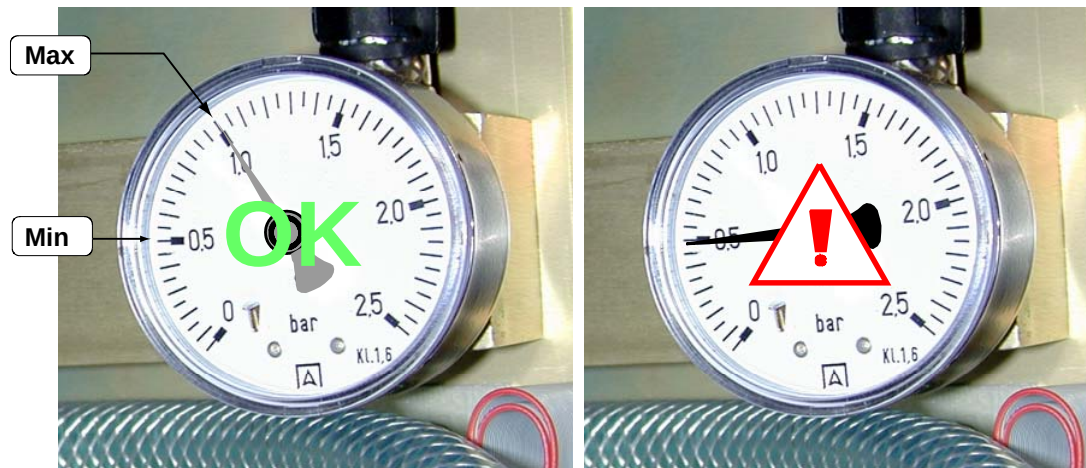


Image 3-1
Manometer read out

Procedure to follow

- Prepare the projector ("Preparation of the projector", page 2).
- Expel the unwanted air in the cooling circuit ("Expelling of any unwanted air", page 7).
- Pressure cooling loop to **maximum** 1 bar, using appropriate air pump and adapter